

IN THE UNITED STATES DISTRICT COURT  
FOR THE SOUTHERN DISTRICT OF TEXAS  
CORPUS CHRISTI DIVISION

MARC VEASEY, *et al.*,

Plaintiffs,

v.

RICK PERRY, *et al.*,

Defendants.

Civil Action No. 2:13-cv-193 (NGR)

UNITED STATES OF AMERICA,

Plaintiff,

TEXAS LEAGUE OF YOUNG VOTERS  
EDUCATION FUND, *et al.*,

Plaintiff-Intervenors,

TEXAS ASSOCIATION OF HISPANIC  
COUNTY JUDGES AND COUNTY  
COMMISSIONERS, *et al.*,

Plaintiff-Intervenors,

v.

STATE OF TEXAS, *et al.*,

Defendants.

Civil Action No. 2:13-cv-263 (NGR)

TEXAS STATE CONFERENCE OF NAACP  
BRANCHES, *et al.*,

Plaintiffs,

v.

JOHN STEEN, *et al.*,

Defendants.

Civil Action No. 2:13-cv-291 (NGR)

BELINDA ORTIZ, *et al.*,

Plaintiffs,

v.

STATE OF TEXAS, *et al.*,

Defendants

Civil Action No. 2:13-cv-348 (NGR)

**DECLARATION OF Michelle Saunders Rudolph**

I, Michelle Saunders Rudolph, pursuant to 28 U.S.C. § 1746, declare as follows:

1. I currently serve as Acting Division Director, Data, Analysis and Programs Division, DMDC/DHRA/DoD. I have served in this capacity for close to 2 years. My duties include ensuring the data arriving at DMDC is of sound quality so Servicemembers and their families can receive the benefits and entitlements they have earned. In addition, I ensure agencies and offices with a need to know, receive accurate and timely data.
2. I have personal knowledge of the information contained in this declaration based upon my work for the Defense Manpower Data Center at the U.S. Department of Defense (“DMDC”), and my supervision of completion of the database comparison described below.

3. On February 28, 2014, DMDC received from the United States Department of Justice an encrypted hard drive containing data regarding Texas registered voters in the form of a 7 gigabyte .csv file containing 13,564,420 records for Texas registered voters. DMDC was able to load all 13,564,420 records.

4. The Texas data that DMDC received contained the following fields:

- |                     |                 |
|---------------------|-----------------|
| - Vuid              | - AGD           |
| - last_name         | - AGD_TAG       |
| - first_name        | - AGD_unique    |
| - middle_name       | - and           |
| - ssn               | - ADN_TAG       |
| - ssn4_str          | - ADN_unique    |
| - gender_code       | - AGN           |
| - official_id       | - AGN_TAG       |
| - dl_id_str         | - AGN_unique    |
| - date_of_birth     | - GDN           |
| - voter_status_code | - GDN_TAG       |
| - block_number      | - GDN_unique    |
| - street_name       | - DLN           |
| - city              | - DLN_TAG       |
| - state             | - DLN_unique    |
| - zip_code          | - unique_count  |
| - zip_str           | - FMLD          |
| - mail_adrs_1       | - FMLD_TAG      |
| - last_fix          | - FMLD_unique   |
| - multi_lastname1   | - SDZ           |
| - multi_lastname2   | - SDZ_TAG       |
| - first_fix         | - SDZ_unique    |
| - middle_initial    | - SND           |
| - fem_str           | - SND_TAG       |
| - dob_str           | - SND_unique    |
| - zip5_res_alt      | - FML1D         |
| - str_num_res_alt   | - FML1D_TAG     |
| - AGDN              | - FML1D_unique  |
| - AGDN_TAG          | - FML2D         |
| - AGDN_unique       | - FML2D_TAG     |
| - AGDNlast          | - FML2D_unique  |
| - AGDNlast_TAG      | - unique_count2 |
| - AGDNlast_unique   | - var_fill      |

- K2
- K3
- L2
- L3

5. DMDC executed the data preparation and comparison steps, attached as Ex. A, that were provided by the United States Department of Justice.
6. Through this process, DMDC attempted to match particular combinations of identifying information for Texas registered voters (*e.g.*, first and last name, gender, and date of birth) with the same or related combinations of identifying information with respect to persons eighteen years of age or older holding a valid form of one of the following Department of Defense (“DoD”) photo identification cards: Common Access Cards and Uniformed Services ID Cards (including Department of Defense Civilian Retiree Cards). For each particular combination, DMDC identified instances where the identifying information for a Texas registered voter matched with the respective combination of identifying information for one or more holders of DoD photo identification.
7. In order to conduct the requested matches, and to create and record the combinations used for the Stage 4 matches, DMDC reformatted the original .csv file into a fixed format flat file to which matching results were appended.
8. Two DoD datasets were created for this analysis—one contained records of holders of qualifying DoD photo ID located in Texas and the other contained records for holders of qualifying DoD photo ID located outside of Texas. For each sweep through the relevant DoD datasets, we appended a column to the Texas data to indicate, on a record-by-record basis, the output of the database comparisons on all of the requested combinations. The frequencies of any missing values in the underlying DoD data are provided as Ex. B.

9. On May 9, 2014, DMDC transferred responsive data to the Department of Justice, in the form of a 21.5 gigabyte file with pipe delimiters. The name of the results file transferred to the Department of Justice is “Team Match Report”.
10. The results of each sweep, as described in Ex. A, can be found in the following columns of the data that DMDC returned to the Department of Justice on May 9:
  - a. “Key\_A\_match\_flag\_Texas” contains results of the Stage 1, Step 3.1.1, Combination A match;
  - b. “Key\_B\_match\_flag\_Texas” contains results of the Stage 1, Step 3.1.2, Combination B match;
  - c. “Key\_C\_match\_flag\_Texas” contains results of the Stage 1, Step 3.1.2, Combination C match;
  - d. “Key\_D\_match\_flag\_Texas” contains results of the Stage 1, Step 3.1.2, Combination D match;
  - e. “Key\_E\_match\_flag\_Texas” contains results of the Stage 1, Step 3.1.2, Combination E match;
  - f. “Key\_F\_match\_flag\_Texas” contains results of the Stage 1, Step 3.1.2, Combination F match;
  - g. “Key\_G\_match\_flag\_Texas” contains results of the Stage 2, Step 3.2.1, Combination G match;
  - h. “Key\_H\_match\_flag\_Texas” contains results of the Stage 2, Step 3.2.2, Combination H match;
  - i. “Key\_I\_match\_flag\_Texas” contains results of the Stage 2, Step 3.2.2, Combination I match;

- j. "Key\_KtoG\_match\_flag\_Texas" contains results of the Stage 2, Step 3.2.3,  
Combination K to G match;
- k. "Key\_KtoK\_match\_flag\_Texas" contains results of the Stage 2, Step 3.2.3,  
Combination K match;
- l. "Key\_KtoL\_match\_flag\_Texas" contains results of the Stage 2, Step 3.2.3,  
Combination K to L match;
- m. "Key\_LtoG\_match\_flag\_Texas" contains results of the Stage 2, Step 3.2.4,  
Combination L to G match;
- n. "Key\_LtoL\_match\_flag\_Texas" contains results of the Stage 2, Step 3.2.4,  
Combination L match;
- o. "Key\_LtoK\_match\_flag\_Texas" contains results of the Stage 2, Step 3.2.4,  
Combination L to K match;
- p. "Key\_F\_match\_flag\_Nationwide" contains results of the Stage 3, Step 3.3.1,  
Combination F match;
- q. "Key\_I\_match\_flag\_Nationwide" contains results of the Stage 3, Step 3.3.2,  
Combination I match;
- r. "Key\_KtoG\_match\_flag\_Nationwide" contains results of the Stage 3, Step 3.3.3,  
Combination K to G match;
- s. "Key\_KtoK\_match\_flag\_Nationwide" contains results of the Stage 2, Step 3.3.3,  
Combination K match;
- t. "Key\_KtoL\_match\_flag\_Nationwide" contains results of the Stage 2, Step 3.3.3,  
Combination K to L match;

- u. "Key\_LtoG\_match\_flag\_Nationwide" contains results of the Stage 3, Step 3.3.4, Combination L to G match;
- v. "Key\_LtoL\_match\_flag\_Nationwide" contains results of the Stage 3, Step 3.3.4, Combination L match;
- w. "Key\_LtoK\_match\_flag\_Nationwide" contains results of the Stage 3, Step 3.3.4, Combination L to K match;

11. In the May 9 dataset provided to the Department of Justice, no results were provided for the following matches:

- a. the Stage 2, Step 3.2.2, nine-digit social security number match;
- b. the Stage 3, Step 3.3.2, Combination G match; and
- c. the Stage 3, Step 3.3.2, nine-digit social security number match.

These match results were provided separately on to the Department of Justice on May 28, 2014 as described in paragraph 13 below.

12. In the original May 9 dataset provided to the Department of Justice, results for the Stage 4 matches were provided in the following fields:

- a. "Sweep\_1\_match\_flag\_Nationwide" had partial results for the Stage 4, Step 3.4.1, Sweep 1 match;
- b. "Sweep\_2\_match\_flag\_Nationwide" had partial results for the Stage 4, Step 3.4.2, Sweep 2 match;
- c. "Sweep\_3\_match\_flag\_Nationwide" had partial results for the Sweep 3 match; and
- d. "Sweep\_4\_match\_flag\_Nationwide" had partial results for the Stage 4, Step 3.4.4, Sweep 4 match.

For these Stage 4 matches in the May 9 dataset, the only voter registration records compared were those that had not already matched on a Stage 1 through 3 sweep.

Moreover, the only DoD records compared were for qualifying ID holders outside of Texas. At the request of the Department of Justice, DMDC re-ran each of the Stage 4 matches, matching all Texas voter registration records regardless of whether they had been matched on a Stage 1 through 3 sweep. In addition, the complete voter registration database extract was matched against all qualifying DoD records for ID holders in and outside of Texas. These corrected and complete match results for the Stage 4 sweeps were provided to Department of Justice as part of the May 28, 2014 dataset.

13. The May 28 dataset thus supplemented data not previously provided by DMDC as to three of the sweeps requested by the United States, and also re-ran each of the Stage 4 matches requested by Defendants. To enable the results from the May 28 dataset to be integrated with the May 9 dataset, the May 28 dataset included two unique identifiers: the VUID field from the voter registration file, which is almost completely unique, as well as the Var\_Fill field, which is completely unique. In addition to these identifiers, the following results fields were included in the May 28 dataset:
  - a. "SWEEP\_1\_MATCH\_FLAG\_TEXAS" contains results of the Stage 4, Step 3.4.1, Sweep 1 match based on the Texas-only dataset and  
"SWEEP\_1\_MATCH\_FLAG\_NATIONWIDE" contains the results for the same step based on the non-Texas, nationwide dataset;
  - b. "SWEEP\_2\_MATCH\_FLAG\_TEXAS" contains results of the Stage 4, Step 3.4.2, Sweep 2 match based on the Texas-only dataset and



“SWEEP\_2\_MATCH\_FLAG\_NATIONWIDE” contains the results for the same step based on the non-Texas, nationwide dataset;

- c. “SWEEP\_3\_MATCH\_FLAG\_TEXAS” contains results of the Stage 4, Step 3.4.3, Sweep 3 match based on the Texas-only dataset and

“SWEEP\_3\_MATCH\_FLAG\_NATIONWIDE” contains the results for the same step based on the non-Texas, nationwide dataset;

- d. “SWEEP\_4\_MATCH\_FLAG\_TEXAS” contains results of the Stage 4, Step 3.4.4, Sweep 4 match based on the Texas-only dataset and

“SWEEP\_4\_MATCH\_FLAG\_NATIONWIDE” contains the results for the same step based on the non-Texas, nationwide dataset;

- e. “SSN9\_SECONDARY\_TEXAS” contains results of the Stage 2, Step 3.2.2, nine-digit social security number match;

- f. “SSN9\_SECONDARY\_NATIONWIDE” contains the results of the Stage 3, Step 3.3.2, nine-digit social security number match; and

- g. “KEY\_G\_MATCH\_FLAG\_NATIONWIDE” contains the results of the Stage 3, Step 3.3.2, Combination G match.

- 14. In both the May 9 and May 28 datasets, a result of “1” indicates that the respective combination from one DoD record matched; “2” indicates that two or more DoD records matched on the respective combination; “0” indicates that there was no match; and a blank space indicates that no match was attempted.<sup>1</sup>

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<sup>1</sup> The only exception to this convention is with respect to the Combination G match in the May 28 dataset, where a “0” can indicate both that no match was attempted and that no match was made. No match would have been attempted where the underlying voter registration record had matched on a Stage 1 or Stage 2 combination, or where the particular values in Combination G were not unique among all voter registration records to be compared.

15. No other matching comparisons between the Texas data and data from DMDC were undertaken beyond those set forth above, and in accordance with the steps provided in Ex. A.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on May 29, 2014.

A handwritten signature in black ink, appearing to read "Michelle Rudolph", with a long horizontal flourish extending to the right.

Exhibit A

**United States v. Texas: Federal Agency Algorithm Summary**

This document summarizes the database matches that both the United States and all other plaintiffs and the State of Texas have requested from Federal Agencies as part of the *Veasey v. Perry/United States v. Texas* litigation (S.D. Tex).

The matching process proceeds in three parts, which are explained in detail below. *First*, databases are prepared and standardized. *Second*, identifier values are constructed by combining multiple individual fields. *Third*, the United States' one-to-many matches and the State of Texas's many-to-many matches are conducted between databases.

**PART I: DATABASE PREPARATION**

**Stage 1: Extraction of Available Data from Federal Identification & Disability Databases**

- Step 1.1.1:** Extract complete name into separate first name, middle name, and last name fields.
- Step 1.1.2:** Extract date of birth.
- Step 1.1.3:** Extract gender.
- Step 1.1.4:** Extract residential address and mailing address.
- Step 1.1.5:** Extract social security number.
- Step 1.1.6:** Extract Texas driver license number (only if present in Federal database).

**Stage 2: Separate Valid Identification and Disability Records**

- Step 1.2.1:** Remove records from identification database extracts that indicate that an ID has been revoked or has expired more than 60 days before the date of the TEAM database snapshot (which is January 15, 2014).

Exhibit A

- Step 1.2.2:** Remove records from disability database extracts that do not indicate current disability status or indicate a Veterans Administration disability rating of less than 50%.

**Stage 3: Diagnostics**

- Step 1.3.1:** Report the frequency of missing values for each field.
- Step 1.3.2:** Report the frequencies of invalid Social Security numbers, such as 111111111 and 123456789.
- Step 1.3.3:** Report the frequencies of likely invalid dates of birth, such as January 1, 1901 and November 11, 1911.

**Stage 4: Standardize Last Name**

- Step 1.4.1:** Remove last name suffixes that are contained within the last name field, rather than a distinct suffix field. *E.g.*, <Smith Jr.> becomes <Smith>.
- Step 1.4.2:** For last names containing hyphens, populate separate last name fields for all parts of the last name. *E.g.*, the last name <Smith-Jones> would have the value <Smith> entered into a LastName1 field and the value <Jones> entered into a LastName2 field.
- Step 1.4.3:** Remove spaces, hyphens, periods, and apostrophes from all last name fields and convert all letters to uppercase. *E.g.*, <O'Connor> becomes <OCONNOR> and <Smith-Jones> becomes <SMITHJONES>.
- Step 1.4.4:** Code all missing values as blank fields.

Exhibit A

**Stage 5: Standardize First Name and Middle Name**

**Step 1.5.1:** Remove spaces, hyphens, periods, and apostrophes from the first name field and convert all letters to uppercase. *E.g.*, <Jean-Paul> becomes <JEANPAUL>.

**Step 1.5.2:** Parse the first letter of the middle name (if available) and use it to populate a middle initial field. *E.g.*, <John> would yield <J>.<sup>1</sup>

**Step 1.5.3:** Code all missing values as blank fields.

**Stage 6: Standardize Date of Birth**

**Step 1.6.1:** Convert the date of birth to an eight-digit string of MMDDYYYY.

**Step 1.6.2:** Code all missing values as blank fields.

**Stage 7: Standardize Gender**

**Step 1.7.1:** Code gender as a string of 1 for females and 0 for males.

**Step 1.7.2:** Fill missing gender values using the most common gender value for the first name associated with a record. *E.g.*, if 99% of records with first name <JOHN> are listed as male, assign the male identifier to all records with first name <JOHN> and no listed gender.

**Step 1.7.3:** If missing values remain, code all missing values as blank fields.

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<sup>1</sup> The U.S. Department of State does not maintain a separate field for middle names in its database of U.S. Passport and Passport Card holders. Instead, both first and middle name may be stored in the first name field. For this database, the following rule will be applied: treat the first word in the first name field as the first name, and treat the first letter following the first space as the middle initial.

Exhibit A

**Stage 8: Standardize Address**

- Step 1.8.1:** Convert the residential ZIP code to a string if it is stored as a numeric field.
- Step 1.8.2:** Where the residential address ZIP code is blank, populate that field with the value in the mailing address ZIP code field, if available.<sup>2</sup>
- Step 1.8.3:** Truncate the residential ZIP code field to the first five digits. *E.g.*, <77777-1234> becomes <77777>.
- Step 1.8.4:** Where the residential address field is blank, populate that field with the value in the mailing address field, if available.
- Step 1.8.5:** Where address field containing street address begins with a street number, isolate the street number. *E.g.*, <123 Main Street> becomes <123>.
- Step 1.8.6:** Where the address field begins with recognized strings indicating a mail box, eliminate strings to isolate the box number. *E.g.*, <PO Box 444> becomes <444>.
- Step 1.8.7:** If missing values remain, code all missing values as blank fields.

**Stage 9: Standardize Social Security Number**

- Step 1.9.1:** Convert the social security number to a string if it is stored as a numeric field.
- Step 1.9.2:** Using full social security number, check for invalid SSNs. In the case of invalid SSNs, code as missing. *E.g.*, <123456789> becomes <>.

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<sup>2</sup> For purposes of this database matching protocol, the only address fields utilized with respect to data regarding U.S. Passports and U.S. Passport Cards are those regarding mailing addresses.

## Exhibit A

**Step 1.9.3:** Extract the last four digits of full social security number as a four-character string and use them to populate a separate SSN4 field.

**Step 1.9.4:** Code all missing values as blank fields.

## PART II: DATABASE PREPARATION

### **Stage 1: Construct Primary Identifier Variables for United States' One-to-Many Sweeps**

**Step 2.1.1:** Create Combination A: First Name + Last Name + Gender + DOB + Residential ZIP + Residential Street Number. *E.g.*, the separate fields <JEAN>, <SMITH>, <0>, <01011950>, <77777>, and <123> are combined to a single field <JEANSMITH00101195077777123>.<sup>3</sup>

**Step 2.1.2:** Create Combination B: Last Name + Gender + DOB + Residential ZIP + Residential Street Number.

**Step 2.1.3:** Create Combination C: Gender + Date of Birth + Residential ZIP + Residential Street Number.

**Step 2.1.4:** Create Combination D: First Name + Last Name + Date of Birth + Residential ZIP + Residential Street Number.

**Step 2.1.5:** Create Combination E: First Name + Last Name + Gender + Residential ZIP + Residential Street Number.

**Step 2.1.6:** Create Combination F: First Name + Last Name + Gender + DOB.

**Step 2.1.7:** Create Combination M: Texas Driver License Number (where available).

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<sup>3</sup> For the U.S. Department of State only, the name portion of any combination is truncated if it is more than 32 characters long.

Exhibit A

**Stage 2: Construct Secondary Identifier Variables for United States' One-to-Many Sweeps**

- Step 2.2.1:** Create Combination G: First Name + Middle Initial + Last Name + Date of Birth.<sup>4</sup>
- Step 2.2.2:** Create Combination H: SSN4 + Date of Birth + Residential ZIP.
- Step 2.2.3:** Create Combination I: SSN4 + First Name + Last Name + Date of Birth.
- Step 2.2.4:** Create Combination K: First Name + Last Name 1 + Middle Initial + Date of Birth.
- Step 2.2.5:** Create Combination L: First Name + Last Name 2 + Middle Initial + Date of Birth.
- Step 2.2.6:** Full Social Security Number.

**Stage 3: Construct Identifiers Used Only For Texas's Many-to-Many Sweeps**

- Step 2.3.1:** Create Combination for Texas's Sweep 1: SSN4 + Last Name + DOB.
- Step 2.3.2:** Create Combination for Texas's Sweep 3: First Name + Last Name + DOB
- Step 2.3.3:** Create Combination for Texas's Sweep 4: First Name + Middle Initial + Last Name + DOB

**Note:** Combinations for Texas's Sweeps 1 and 3 do not already exist as pre-made fields in the TEAM database extract but instead must be created from the underlying TEAM database fields, in addition to being constructed on the Federal database side. Texas's Sweep 4 is equivalent to

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<sup>4</sup> Only for the State Department, create three further variations of Combination G created using the State Department's "LFMName" field which contains Last, First, and Middle Names, in that order, truncated to a maximum length of 32 characters. Combination G1 is DOB + LFMName; Combination G2 is DOB + First two words of LFMName; and Combination G3 is DOB + First two words of LFMName + First character of third word of LFMName.



Exhibit A

the combination for the United States' Combination G. Texas's Sweep 2 is on full 9 social security number.<sup>5</sup>

**Stage 4: Establish Identifier Uniqueness For Combinations A - L**

**Step 2.4.1:** Generate a field that establishes the uniqueness of each identifier variable.

For federal databases, for each combination A-L, generate a field that establishes uniqueness among only Texas records and a field that establishes uniqueness among nationwide records. *E.g.*, if only one record has the string <JEANSMITH01011950012377777> for Combination A, populate the uniqueness field for Combination A for that record as <1>. If four records have the string <JOHNSMITHA0101950> for Combination G, populate the uniqueness field for Combination G for each of those records as <2>, which indicates any number greater than one.

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<sup>5</sup> For purposes of matching to U.S. Department of State Passport and Passport Card holder data, Texas's Sweep 3 and Sweep 4 are as follows: Sweep 3: Last Name + First Name (restricted to 32 characters) + DOB. Sweep 4: Last Name + First Name + Middle Initial (restricted to 32 characters) + DOB.

Exhibit A

**PART III: MATCH DATABASES**

**Stage 1: United States' Primary One-to-Many Matching Sweeps**

- Step 3.1.1:** For each case in which Combination A is unique in the TEAM database, match Combination A against Combination A in the identifier or disability database. For federal databases, use only the subset of records with Texas addresses in the identifier or disability database. Where a match is attempted but no match is found, indicate a zero in the Combination A output field. Where there is a match, indicate the uniqueness of Combination A in the identifier or disability database in the Combination A output field (*e.g.*, in cases where there is one matching record in the Federal database, <1> should be inserted into the Combination A output field, while a <2> should be inserted into the Combination A output field if the TEAM record matched 2 or more records in the Federal database).
- Step 3.1.2:** Use the procedure in Step 3.1.1 to match Combination B, Combination C, Combination D, Combination E, and Combination F in the TEAM database against the equivalent combination field in the identifier or disability database.
- Step 3.1.3:** Use the procedure in Step 3.1.1 to match Combination M in the TEAM database against the equivalent combination field in the identifier databases produced by the State of Texas.

Exhibit A

**Stage 2: United States' Secondary One-to-Many Matching Sweeps**

- Step 3.2.1:** For each case in which no matches were found in the primary one-to-many matching sweeps (A-F, M), and where Combination G is unique in the TEAM database, match Combination G against Combination G in the identifier or disability database. For federal databases, use only the subset of records with Texas addresses in the identifier or disability database. Where a match is attempted but no match is found, indicate a zero in the Combination G output field. Where there is a match, indicate the uniqueness of Combination G in the identifier or disability database in the Combination G output field (*e.g.*, <1> if a unique match and <2> if matched to more than one record).
- Step 3.2.2:** For each case in which no matches were found in the primary one-to-many matching sweeps (A-F, M), use the procedure in Step 3.2.1 to match Combination H, Combination I, and complete social security number<sup>6</sup> in the TEAM database against the equivalent combination/field in the identifier or disability database.
- Step 3.2.3:** For each case in which no matches were found in the primary one-to-many matching sweeps (A-F, M), use the procedure in Step 3.2.1 to match Combination K against Combination G, Combination K, and Combination L in the identifier or disability database.

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<sup>6</sup> The full social security number is not created as a separate “combination” as it is its own field stored within the TEAM database under the field name “ssn”.

Exhibit A

**Step 3.2.4:** For each case in which no matches were found in the primary one-to-many matching sweeps (A-F, M), use the procedure in Step 3.2.1 to match Combination L against Combination G, Combination K, and Combination L in the identifier or disability database.

**Stage 3: United States' Nationwide Federal Sweeps**

**Step 3.3.1:** For each case in which no matches were found in the primary and secondary matching sweeps of Texas records in a federal identifier or disability database, and where Combination F is unique, match Combination F against Combination F in the nationwide identifier or disability database. Where a match is attempted but no match is found, indicate a zero in the Combination F nationwide output field. Where there is a match, indicate the uniqueness of Combination F in the identifier or disability database in the Combination F nationwide output field (*e.g.*, <1> if a unique match and <2> if matched to more than one record).

**Step 3.3.2:** For each case in which no matches were found in the primary and secondary matching sweeps of Texas records in a federal identifier or disability database, use the procedure in Step 3.3.1 to match Combination G, Combination I, and full social security number in the TEAM database against the equivalent combination/field in the nationwide identifier or disability database.

**Step 3.3.3:** For each case in which no matches were found in the primary and secondary matching sweeps of Texas records in a federal identifier or disability database, use the procedure in Step 3.3.1 to match Combination

Exhibit A

K against Combination G, Combination K, and Combination L in the nationwide identifier or disability database.

**Step 3.3.4:** For each case in which no matches were found in the primary and secondary matching sweeps of Texas records in a federal identifier or disability database, use the procedure in Step 3.3.1 to match Combination L against Combination G, Combination K, and Combination L in the nationwide identifier or disability database.<sup>7</sup>

**Stage 4: Texas' Many-to-Many Nationwide Sweeps**

**Step 3.4.1** Regardless of whether the combination for Sweep 1 is unique in the TEAM database, match against the equivalent combination in a nationwide search of the Federal database.

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<sup>7</sup> Step 3.3.5 for the State Department only: Match the following Combination G variations from applicable State Department records, first to include only the subset of records with Texas addresses, and then to include all applicable U.S. Passport and Passport Card records nationwide (*e.g.*, without Texas addresses), against the following fields from the TEAM database:

- Combination G1 to DOB + Last\_fix + First\_fix + Middle\_name from the TEAM database;
- Combination G2 to DOB + Last\_fix + First\_fix from the TEAM database;
- Combination G2 to DOB + Last\_fix + First word of First\_name from the TEAM database;
- Combination G3 to DOB + Last\_fix + First\_fix + Middle\_Initial from the TEAM database;
- Combination G3 to DOB + Last\_fix + First word of First\_name + Middle\_Initial from the TEAM database; and
- Combination G3 to DOB + Last\_fix + First word of First\_name + First character of Second word of First\_fix from the TEAM database.

Attempt matches for all TEAM records, regardless of whether they matched in any prior sweeps. Indicate <1> if a unique match and <2> if matched to more than one record.

Exhibit A

- Step 3.4.2** Regardless of whether full 9 social security number is unique in the TEAM database, for Sweep 2, match against the equivalent field in a nationwide search of the Federal database.
- Step 3.4.3** Regardless of whether the combination for Sweep 3 is unique in the TEAM database, match against the equivalent combination in a nationwide search of the Federal database.
- Step 3.4.4** Regardless of whether the combination for Sweep 4 (Combination G) is unique in the TEAM database, match against the equivalent combination in a nationwide search of the Federal database.

**Note:** For each of the Texas many-to-many sweeps:

- Indicate <1> if any TEAM combination matches a single combination in the Federal database
- Indicate <2> if any TEAM combination matches more than one record in the Federal database.
- Indicate <0> if no match is achieved.

**Examples:**

- If there are two TEAM records that have identical versions of the combination for Sweep 1, and there is one record in the Federal database that matches on this combination, both of the underlying TEAM records will have a matching output of <1> for Sweep 1.
- If there are three TEAM records that have identical versions of the combination for Sweep 3, and there are five records in the Federal database that match on that combination, the three TEAM records will each have a matching output of <2> for Sweep 3.

| Data Element  | Data Availability | "In Texas" Population | "Outside of Texas" Population |
|---------------|-------------------|-----------------------|-------------------------------|
| Last Name     | available         | 746,010               | 8,285,517                     |
|               | missing           | 0                     | 1                             |
| First Name    | available         | 746,004               | 8,285,426                     |
|               | missing           | 6                     | 92                            |
| Middle Name   | available         | 669,476               | 7,656,604                     |
|               | missing           | 76,534                | 628,914                       |
| SSN           | available         | 746,010               | 8,285,517                     |
|               | missing           | 0                     | 1                             |
| Date of Birth | available         | 746,010               | 8,285,518                     |
|               | missing           | 0                     | 0                             |
| Gender        | available         | 746,003               | 8,285,379                     |
|               | missing           | 7                     | 139                           |
| Address Text  | available         | 746,010               | 8,108,935                     |
|               | missing           | 0                     | 176,583                       |
| Address State | available         | 746,010               | 8,026,896                     |
|               | missing           | 0                     | 258,622                       |
| Address Zip   | available         | 745,993               | 8,072,943                     |
|               | missing           | 17                    | 212,575                       |

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| Data Element  | Data Quality* | "In Texas" Population | "Outside of Texas" Population |
|---------------|---------------|-----------------------|-------------------------------|
| SSN           | good          | 744,032               | 8,211,554                     |
|               | bad           | 1,978                 | 73,964                        |
| Date of Birth | good          | 745,936               | 8,284,603                     |
|               | bad           | 74                    | 915                           |

**NOTES:**

An SSN was considered "bad" if it met any of the following criteria:

- \*Equalled 000000000, 111111111, 222222222, 333333333, ..., 999999999
- \*Equalled sequential values 123456789 or 234567890
- \*The first 3 numbers were 000 or 666
- \*The first number was 9
- \*The middle node was 00 (ie xxx-00-xxxx)
- \*The last node was 0000 (ie xxx-xx-0000)

A Date of Birth was considered "bad" if it met either of the following criteria:

- \*Birth year was 1914 or prior (aka were 100 years of age or older)
- \*Representative of repeating digits (ie 01/01/01, 02/02/02, ..., 12/12/12)